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Illuminated Jack Stand

TECHNICAL FIELD

5 [0001] The present invention relates to vehicle jack stands.

BACKGROUND OF THE INVENTION

[0002] Vehicle jack stands have been around for years. They are used to support a car, truck, or other vehicle after the vehicle has first been lifted off of the ground by a moveable
10 jack. Jack stands are especially useful when performing repairs from underneath the vehicle since they provide a safe and stable support on which the vehicle can be rested.

[0003] A persistent problem when performing repairs underneath a vehicle is poor visibility. This is due to the fact that the operator is working in the shadow of the vehicle. Moreover, when using jack stands, the vehicle is still positioned rather close to the ground.
15 Consequently, the operator is forced to work on his or her back in the relatively small dark space underneath the vehicle.

[0004] As a result, operators typically must bring lights with them under the vehicle. Due to the small space available, such lights are typically just "bulb-on-a-cord" lighting systems consisting of a light bulb at the end of a power cord.

20 [0005] There are several problems working with this sort of lighting system. First, the light bulbs tend to get broken easily, either when hit by the operator or when inadvertently dropped on the ground. Second, the use of "bulb-on-a-cord" lighting systems typically results in a power cords being strewn over the ground under the vehicle. This is especially true when a large number of separate lights are used. In addition, when multiple lights are
25 used, each must be plugged into a separate power outlet; and, each additional light results in an additional power cord strewn on the ground under the vehicle. Third, these lights are frequently placed directly on the ground to avoid casting shadows across the bottom of the vehicle. As such, the light bulbs are vulnerable to breakage. Fourth, the operator is continually re-positioning the various lights at different locations under the bottom of the
30 vehicle. Thus, such "bulb-on-a-cord" systems require continuous handling by the operator. Fifth, when such "bulb-on-a-cord" lights are not simply placed on the floor, they are instead hung from various locations on the underside of the vehicle. Finding appropriate locations from which to hang these lights may be problematic. Moreover, should the light bulbs simply be hung from the bottom of the vehicle, they often tend to cast unwanted shadows across the

underside of the vehicle. Thus, when the light bulb is placed on the ground, it is too low (i.e.: being vulnerable to breakage). Conversely, when the light source is hanging from the underside of the vehicle, it frequently is too high (i.e.: tending to cast unwanted shadows).

5 SUMMARY OF THE INVENTION

[0006] The present invention provides an illuminated jack stand for supporting a vehicle thereon. By integrating a light source into a jack stand, the present invention can be operated to provide a well lighted region underneath the vehicle in which a operator can comfortably work. As will be explained, the present invention provides lighting underneath a vehicle in
10 more convenient manner that can be achieved with existing "bulb-on-a-cord" systems. As such, the present invention overcomes the limitations of conventional "bulb-on-a-cord" systems.

[0007] In optional embodiments, the present invention provides power inlets and outlets on the jack stand itself. Thus, a further advantage of the present invention is that a plurality
15 of jack stands can be connected to one another to provide lighting from different directions underneath the vehicle. For example, four illuminated jack stands may be used, each positioned under a corner of the vehicle. As such, the illumination provided by the four jack stands would also come from the corners of the vehicle, thus providing a uniform lighting distribution under the vehicle, which would minimize the potential for unwanted shadows.

[0008] An additional advantage to this interconnected illuminated jack stand approach is
20 that the power cords running between the jack stands would only need to run around underneath the corners of the vehicle. Thus, there is no need for one or more power cords to run across the ground underneath the vehicle in the space where the operator is working. The present invention therefore avoids the need for operators to work with any lighting power
25 cords strewn on the ground under the truck or car.

[0009] In preferred aspects, the present invention delivers light both at a preferred height and angle for illumination of the underside of the vehicle. In further optional embodiments, the light source may be rotated or tilted such that the direction or angle at which the light is delivered from the jack stand may be adjusted. Thus, it is possible to have different jack
30 stands deliver light at different directions and angles from one another. This may be advantageous in providing optimal lighting underneath the vehicle.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0010] Fig. 1 is a perspective view of the present invention.
- [0011] Fig. 2 is a front elevation view of the present invention.
- [0012] Fig. 3 is a side elevation view of the present invention.
- 5 [0013] Fig. 4 is a rear elevation view of the present invention.
- [0014] Fig. 5 is a top plan view of four illuminated jack stands, located under the four corners of a vehicle positioned thereabove.

DETAILED DESCRIPTION OF THE DRAWINGS

- 10 [0015] As seen in the attached Figs., the present invention provides a vehicle jack stand 10 having a support body 20 with a vertically moveable post 22 received therein. Support body 22 may have a generally pyramidal shape, as shown. Such pyramidal shape provides stability to jack stand 10. A mechanism 24 for controlling the vertical height of moveable post 22 with respect to support body 20 may also be included. Optionally, such mechanism
- 15 24 may include a ratchet.
- [0016] A light 30 is mounted in support body 20, as shown. During operation, jack stand 10 is positioned such that light source 30 illuminates underneath the vehicle (a corner or edge of which is supported by post 22 of jack stand 10).
- [0017] As can be seen in the side view of Fig. 3, light source 30 may optionally be
- 20 mounted in support body 20 so as to provide illumination at an upward angle. Specifically, light 30 may be disposed co-planar with one of the sides 21 of generally pyramidal shaped support body 20. Thus, the center beam B of the light provided by light 30 would be directed perpendicular to side 21 (i.e.: at an upward angle ALPHA from the horizontal direction H). In optional preferred aspects, upward angle ALPHA may be from about 20 to 70 degrees
- 25 horizontal direction H. In more preferred optional aspects, upward angle ALPHA may be from about 40 to 60 degrees horizontal direction H. It is to be understood that beam B represents only the center of the light distribution from light 30. Thus, illumination is provided equally both above and below center beam B. A further advantage of having light source 30 mounted into side 21 of support body 20 is that it permits also light to be directed
- 30 straight upwards in a vertical direction. Thus, the present invention can be used to provide illumination directly underneath the edge of a vehicle supported on post 22. In preferred aspects, light 30 may optionally be a halogen lamp, offering the benefits of high intensity lighting at low power requirements. Moreover, in optional embodiments, the bulb of light 30

may itself be rotated (in the plane of side 21) to change the direction in which the beam B of light is delivered from light 30.

[0018] Fig. 4 shows a rear view of the invention showing power inlet cord 50. As can be seen, power inlet cord 50 can conveniently be coiled within the body of jack stand 10 itself.

5 [0019] In alternate embodiments of the present invention, light 30 may be mounted in support body 20 such that the angle at which the light is directed is adjustable. For example, light 30 may be mounted to support body 20 by pivots. Thus, an operator can simply pivot light 30 to direct more light upwardly or downwardly, as required. This feature of the invention may be useful when multiple jack stands (e.g.: 2 or 4 jack stands) are used under
10 the vehicle, as it allows an operator/operator to point the light from different jack stands in different directions. This can be useful when working at different locations under the vehicle, or in simply creating optimal lighting conditions under the vehicle.

[0020] Figs. 1 and 2 shows a further embodiment of the invention in which an optional dimmer (and/or motion sensor) switch 40 is provided. Dimmer switch 40 controls the
15 intensity of light 30, and is advantageous both in providing extra lighting when visibility is poor and in providing reduced lighting when light glare tends to distract the operator or impair his or her visibility. Moreover, dimmer switch 40 allows the light intensity levels to be varied to accommodate different sizes of vehicles placed on to the jack stand(s). A further advantage of dimmer switch 40 is apparent when multiple jack stands are used. Specifically,
20 an operator can select the optimal light intensity delivered from each of the various light stands positioned under the vehicle. Thus, an operator can apply brighter illumination from one jack stand and dimmer illumination from another jack stand. Thus, more light can be provided at one location on the underside of the vehicle while still reducing the potential for unwanted shadows across the bottom of the vehicle. The present system of adjustable
25 intensity lighting delivered from various jack stands is especially useful when the operator is working at different locations underneath the vehicle at different times (i.e. moving closer or farther away from each of the different jack stands).

[0021] As shown in Fig. 2, dimmer switch 40 may be conveniently mounted to support body 20. Alternatively, dimmer switch 40 may instead be a remote dimmer switch 40 that is
30 not mounted to support body 20. An advantage of having a remote dimmer switch 40 (Fig.4) is that the operator can conveniently adjust the intensity of light 30 while working either underneath the vehicle.

[0022] Optionally, switch 40 may include a motion sensor such that if an operator is away from the vehicle for a certain period of time, light 30 will automatically switch off.

When the operator returns to the vehicle, sensor switch 40 will detect this motion and turn light 30 back on. Thus, it is to be understood that switch 40 may alternately comprise a dimmer, a motion sensor, or both.

[0023] As seen in Figs. 1 to 4, jack stand 10 may also include a power inlet 50 and one or more power outlets 52. Such power inlets and outlets may be mounted directly into support body 20, as shown. As can be seen, power outlet(s) 52 may preferably include a waterproof power outlet cover. Power inlet 50 provides a location in which to plug a power cord so as to illuminate light 30. As shown, power inlet 50 may be a simple cord with a plug to which an extension cord is attached to power the device. However, the present invention is not so limited. For example, power inlet 50 may instead comprise a plug mounted on the body 20 of jack stand 10. In such embodiments, the power cord may be a cord formed to coil up when not in use. As shown, power inlet 50 may be protected by a cover which attaches through support body 20 directly to power inlet 50.

[0024] Power outlets 52 may be used to connect one illuminated jack stand to another. For example, referring to Fig. 5, four jack stands 10A, 10B, 10C and 10D can be positioned under a car C (shown in dotted lines). A operator M is shown working under the car. As can be seen, power inlet 50 of jack stand 10A may be connected to a wall main outlet 60. Power inlet 50 of jack stand 10B is connected to power outlet 52 of jack stand 10A. Jack stand 10C is similarly connected to jack stand 10B; and jack stand 10D is similarly connected to jack stand 10C.

[0025] As can be seen, operator M is free to move about under car C without any lighting power cords in his/her way. Moreover, only one power outlet 60 is required to illuminate all four jack stands 10A, 10B, 10C and 10D. Conserving the number of power outlets used to provide illumination under the car is beneficial since operators typically require outlets for the operation of their power tools.

[0026] The present invention also includes the method of providing illumination under a vehicle, by: supporting a vehicle on a plurality of illuminated jack stands 10, wherein each of jack stands 10 have a light source 30, a power inlet 50 and one or more power outlets 52 mounted therein, wherein a power outlet 52 from a first jack stand 10A is connected to a power inlet 50 from a second jack stand 10B. In preferred aspects, the present invention also provides the method of adjusting the intensity of light sources 30 of the different jack stands 10 to different levels. Optionally, the present invention also provides the method of adjusting the angles of lights 30 in jack stands 10A, 10B, 10C and 10D to the horizontal; and optionally, different angles to one another.

[0027] The present invention further includes a kit including the illuminated jack stand, as described herein, and instructions for use setting forth one or more of the preferred methods of use, as described herein. Such instructions for use may be provided in a printed form, or in a machine readable format.